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A new description of the type specimen of *Nyctinomus aloysii-sabaudiae* Festa 1907

Zoological Institute of the University of Florence, Director: Prof. G. Colosi

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Festa (1907) described a Molossid bat collected in the district of Toro, E. of Ruwenzori Western Province, Uganda as a new species, *Nyctinomus Aloysii-Sabaudiae*. Unfortunately the original description was incomplete in some respects, particularly in the details of cranial and dental anatomy. As a result of this, the status of this bat has been in doubt ever since. Allen (1939), in his "Checklist of African Mammals", listed it as *Mops angolensis aloysii-sabaudiae*, that is to say in terms of current taxonomy as a subspecies of *Tadarida (Mops) condylura*. Allen was doubtless influenced in this decision by the identification by De Beaux (1922) of some specimens from Uganda as *Chaerephon angolensis sabaudiae* Festa. These specimens, which we have examined, belong in fact to a big population of *Tadarida (Mops) condylura* (greatest skull length of the largest male seen by us: 22.2 mm). Allen (1917, in Allen, Lang and Chapin) stated that an unidentified immature large *Chaerephon* from Avakubi (Congo) might be referable to *N. aloysii-sabaudiae*, but that the description was insufficient for it to be identifiable.

Having regard to all this confusion and uncertainty, a full redescription of the type specimen is clearly necessary, to establish the true characteristics and affinities of this little known animal.

The specimen, now in the collection of the Museo Zoologico of the University of Turin (Nr. CG 2144), is an adult female Molossid bat of medium size.

Measurements in mm (from the spirit specimen): total length 110, tail 40, hind foot 12, forearm 52, ear 21, tragus (free portion) length 1.5, tragus (free portion) width 1.3, third digit (metacarpal 51, first phalanx 21.8, second phalanx 19.8, third phalanx 7.4), fourth digit (metacarpal 50, first phalanx 16.6, second phalanx 10.7, third phalanx 2), fifth digit (metacarpal 28, first phalanx 14.2, second phalanx 3.9, third phalanx 1.2).

External characters (figs. 1,2 E): The eyes are quite well developed, 2.2 mm in antero-posterior diameter. The upper lip is strongly grooved with about eight to ten vertical furrows on each side. The ears are joined across the forehead by a vertical band about 5.5 mm high above the mid point of the rostrum. A portion of the anterior surface of this ridge projects forwards as a small fleshy swelling above the centre of the rostrum. The ears are moderately large and rather squared in outline with the apices rounded. A well developed anti-tragal lobule is present, measuring 5.7 mm across the base by about 3.5 mm in height. The tragus is small; its anterior extremity is bluntly pointed; it has an extended posterior heel which is attached to the mid-point of the anti-tragal lobe medially. Its postero-superior border is indented, between the free part of the tragus and its heel. There is no trace of any gular sac. There is a well developed smooth circular callosity on the base of the thumb, but none on the ankle or sole of the foot. The tail is rather long and the interfemoral membrane relatively short, extending only about 10 mm from the base of the tail. We cannot detect any calcar in the border of the interfemoral membrane. The toes are furnished with scattered hairs about 4 mm long distally, while the outer borders of the first and fifth toes have the usual short recurved hairs. The connecting band between the ears is covered by short (1.5 mm) light brown hairs on the anterior surface and along the free border, but the above mentioned fleshy swelling is naked; from the posterior surface arise a tuft of dark brown hairs 2—4 mm in length, which project 1 mm from the free margin of the connecting band; the more basal of these hairs are longer. Probably the adult male, at least during the breeding season, has a longer tuft. The body hair is rather short, about 4.5 mm in length mid-dorsally and mid-ventrally, but on the throat it attains 8 mm. It appears to have been uniformly coloured and about similar in colour above and below (here a little lighter), a rather dark shade of reddish brown [according to the original description: "castagno chiaro (Russet del Ridgway, A Nomenclature of Colours for Naturalists, pl. 111, No. 16)"]; there is no indication of any white striping on the crown of the head. A well marked band of hair of the same colour, extending from mid-humerus to mid-femur, is present on the ventral surface of the wing membrane adjacent to the body, but separated from it by a semi-naked band about 4 mm in width. The pelage extends to the base of the tail and thighs ventrally, and there is thus no naked area on the lower abdomen. The hair does not otherwise extend on to the tail membrane or wing membranes and there is no band of hairs parallel to the forearm ventrally. A relatively sparsely haired patch is present on the back between the shoulders and the occipital region; in this region the hairs are about 7 mm in length. A few elongated hairs, some attaining more than 9 mm in length, project upwards from the dorsal surfaces of the thighs on each side at the origin of the tail membrane.

Nearly the whole of the pelage has the base lighter than the remaining portion. The anterior margins of the ears, at the apex, have 5/5 minute cutaneous projections. The internal surface of the pinna possesses about ten transverse plicae and is finely haired along its supra-orbital ridge and from this ridge upwards to the blunt apex of the pinna. For the disposition of the hairs on the dorsal surface of the ears see fig. 1B. Scattered short bristles, about 1 mm in length, project from the ridges between the grooves of the upper lip, but the face is otherwise nearly naked. The nostrils are directed slightly outwards and are quite widely separated by a smooth internarial eminence about 3.6 mm in width; the upper edge of the nostril pad is thickly set with small, laterally compressed horny excrescences, about thirty in number, the outermost lying above the level of the external margin of the nostril opening; a short row of about five similar but lower excrescences crosses the upper middle portion of the pad. The lower lip is likewise nearly naked, its surface is wrinkled

ventrally and scattered short bristles (about 0.3 mm in length) project from these wrinkles. A median submental wart is present in the interramial region, about 1.3 mm in diameter, from which project longer hairs, the longest of which is 3 mm in height. The membranes and ears are uniformly dusky blackish brown. The wing membrane is inserted at the mid-point of the tibia. The anal orifice is elevated above the sorrounding skin; the orifice is transverse, creased by distinct radial muscosal rugae and furnished with hairs throughout externally. There is a deep groove separating the anal orifice from the posterior lip of the transverse vaginal opening situated anterior to it. The crescentic posterior vulval lip is hairless and smooth. The anterior lip of the vulva is surmounted by a distinct mons veneris; the conical clitoris is situated on the summit of this swelling and the urethral opening is seen as a semicircular slit-shaped opening, convex forwards, situated in the mons veneris anterior to the vaginal orifice. Vertical rugae are seen in the vaginal mucosa and hairs project vertically from the clitoris and from the sides and anterior part of the mons veneris, but the part surrounding the urethral orifice is smooth.

Cranial characters (figs. 2 B, C, D): The mandibles of the type are now missing.

Measurements in mm: greatest length: 21.4, condylobasal length 19.5, zygomatic breadth 12.3, mastoid breadth 11.3, breadth of braincase 9.8, interorbital constriction 3.8, lachrymal breadth 6.6, depth of braincase 7, median palatal length 8, maxillary cheek teeth C-M^3 7.7, tympanic bulla (greatest diameter) 4.8. The skull is remarkable for its elongated form with a long narrow rostral region very similar in proportions to that of *Tadarida teniotis,* although smaller. This feature was briefly mentioned in Festa's original description: „Il cranio è mediocremente allungato". The zygomatic arches are not widely flaring and are widest in their most posterior part. Slight lachrymal projections are present at the anterior margins of the orbits. The interorbital region is slightly constricted. The narial opening is well developed extending back to the level of the infraorbital foramen. The braincase is smooth without any trace of sagittal crest and there is only a slight lambdoid ridge laterally. The supraoccipital region is rounded, not overhung by the lambdoids, and protrudes slightly, so as to be easily visible from above. The tympanic bulla is of normal proportions on the other. The pre-maxillaries are co-ossified between the upper incisors, and there are three small anterior palatal foramina immediately behind the incisors, arranged in a triangular manner; the anterior foramen is situated just between the incisors. The inter-pterygoid space is divided into two compartments in its anterior part by a bony septum extending from the median posterior margin of the bony palate. Two very well marked oval basi-sphenoid pits are present between the posterior roots of the pterygoids, separated from each other by a rather narrow bony septum. The dorsal profile of the skull is sinuous, with a marked elevation of the braincase above the facial skeleton and with a distinct saddle-like concavity at front of the occiput. The posterior margin of the infraorbital foramen is at the level of the anterior border of the second upper premolar.

Dentition (figs. 2 A, C, D): Dental formula: I 1/2, C 1/1, Pm 2/2, M 3/3 (mandibular teeth from original description). The upper anterior premolar, although small, is quite well developed and situated in the toothrow; M^3 is not reduced, its final commissure is well developed.

The upper incisors are tall, with a narrow gap between them. Their medial borders are nearly vertical, their external borders sloping downwards and inwards to their points. Their posterior surfaces are concave and anterior surfaces convex; their lateral borders are sharp and blade-like, the medial ones less sharp. The canines are tall, slender, triangular in section and acutely pointed. A well developed cingulum is present without any cingular cusps. The canine presents antero-lateral, postero-lateral and medial surface; the antero-lateral and medial surfaces are concave, the

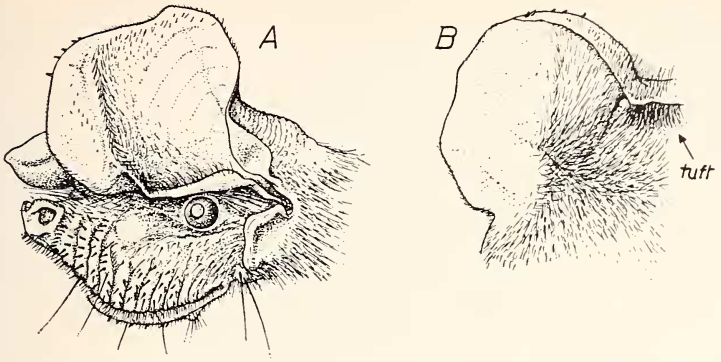

Fig. 1. Tadarida aloysiisabaudiae Festa, type specimen, ♀ — A Lateral view of the head with the top of the left ear turned upwards to show the form of the pinna, B. Dorsal view of the left ear and of the connecting band between the ears (Magnification: about 2½ times)

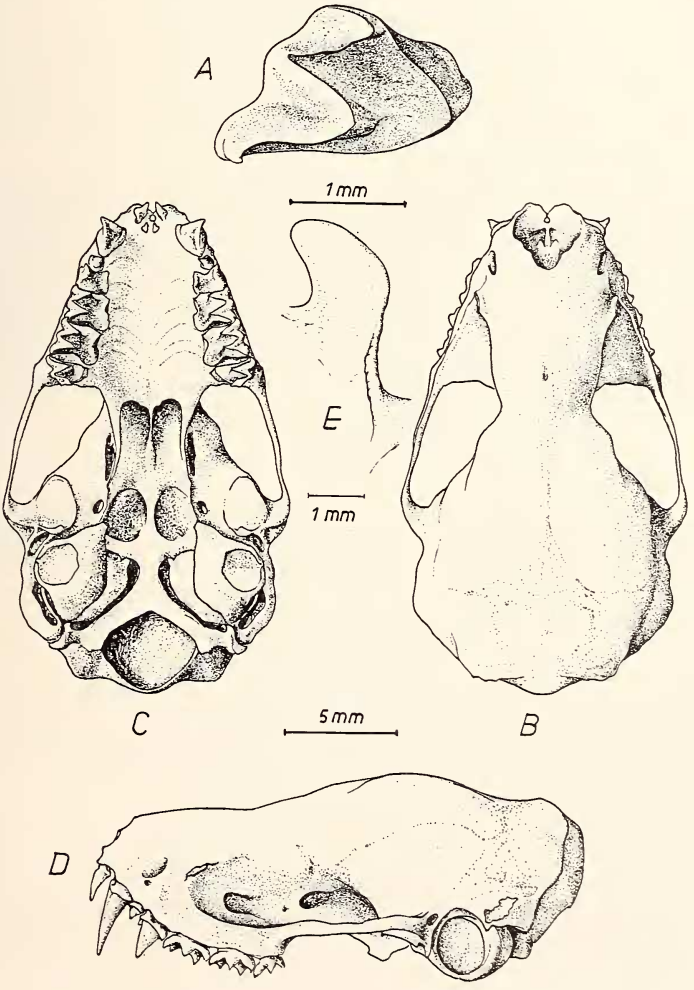

Fig. 2. Tadarida aloysiisabaudiae Festa, type specimen, ♀ — **A.** Left M^3, **B, C, D.** Skull (the anterior extremity of the palatal mucosa is in bad condition; so it is possible that another palatal ridge exists at front of the first one drawn by us), **E.** Left tragus

postero-lateral surface is convex. The tooth has a sharp blade-like cutting edge anteriorly. The small upper premolar is quite well developed and has a pointed cusp; its crown area is somewhat less than that of the upper incisors. It stands in the toothrow, has two roots and is in contact with the canine and separated from the large premolar by a narrow space. It attains about a quarter of the height of the canine, its tip being just below the level of the well developed antero-medial cingular cusp of the large premolar. The first and second molars show the usual well developed W-shaped pattern of principal cusps and connecting commissures, and also possess elevated cingular ridges medially, on which are developed cingular cusps: in the case of M^1 there are three, the anterior one highest, the posterior only just detectable; M^2 possesses only two medial cingular cusps; M^3 is not reduced; it possesses a well developed final commissure, which has a strong terminal medial cusp. Its antero-posterior diameter is more than half that of M^2. It has one well developed medial cingular cusp. From the original description the lower incisors were bilobed and the canines with their bases, a little higher than the incisors, close together („Gli incisivi inferiori sona bilobati. I canini hanno le basi vicine, più alte degli incisivi.").

Summary of important characteristics: The skull and particularly the rostrum is very elongated, with elevated dorsal profile and no sagittal crest. The pre-maxillaries are co-ossified; M^3 is unreduced and the upper anterior premolar in the toothrow. There are deep basi-shenoid pits. Size medium (forearm 52 mm), upper lip grooved, ears rather large and joined across forehead; tragus bluntly pointed, colour nearly uniform russet brown.

Conclusions: This bat is a distinct species, one of the little known larger African members of the Sub-Genus *Chaerephon*. It should be know as *Tadarida (Chaerephon) aloysiisabaudiae* (Festa, 1907). Allen (1939) was not correct in referring this form to *Mops angolensis [= Tadarida (Mops) condylura]* from which it is completely different. The relationship of this bat to other described large *Chaerephon* from Africa is at present obscure, but it seems differ in some features from *T. (C.) russatus* Allen 1917 and also from *T. (C.) bivittatus* (Heuglin, 1861), which are species of about the same dimensions.

Summary

Redescription of the type and only known specimen, of *Nyctinomus Aloysii-Sabaudiae* Festa 1907 (Toro, Uganda). This bat is a distinct species, one of the little known larger African members of the Sub-Genus *Chaerephon*. It should be named *Tadarida (Chaerephon) aloysii-sabaudiae* (Festa, 1907).

Zusammenfassung

Neubeschreibung des typischen und einzigen bekannten Stückes von *Nyctinomus Aloysii-Sabaudiae* Festa 1907 (Toro, Uganda). Diese Fledermaus ist eine gute Art, zugehörig zur Gruppe der wenig bekannten größeren afrikanischen Arten der Untergattung *Chaerephon*. Sie sollte heißen: *Tadarida (Chaerephon) aloysiisabaudiae* (Festa 1907).

Résumé

Nouvelle description de l'exemplaire typique (le seul qui est connu de l'espèce) du *Nyctinomus Aloysii-Sabaudiae* Festa 1907 (Toro, Uganda). Ce chauve-souris est une bonne espèce, laquelle appartient au group, peu conu, qui comprende les espèces africaines les plus grosses du sousgenre *Chaerephon*. Il doit être nommé *Tadarida (Chaerephon) aloysiisabaudiae* (Festa 1907).

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A new bat for Israel, *Eptesicus innesi* Lataste, 1887, with some remarks on the affinities of this species

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On the 22nd April, 1962, a small serotine bat was obtained by the author at Yotvata, in the Wadi Araba, 40 Kms. north of Eilat, Israel. The small size of this animal and its pale sandy colour at once distinguished it from the large, dark coloured northern Serotine of Israel, *Eptesicus serotinus* Schreber, 1774. (See fig. 1). The specimen has been carefully compared with the lectotype and two topotypes of *Eptesicus innesi* Lataste, 1887 (Type Locality Cairo, Egypt) in the British Museum Collection. The skull of the lectotype has been removed from the alcoholic specimen in order to make cranial measurements of this little known bat available for the first time. There is no doubt that the Yotvata bat agrees in all essential details with the specimens of *E. innesi* and that it is the first example to be found since it was originally described. Sanborn and Hoogstraal (1955) knew of no recent occurrences in Egypt.

The flesh and cranial measurements are given below (Tables 1, 2) compared with those of the lectotype and topotypes. Since this is the only freshly skinned specimen known (the Cairo specimens are all three alcoholic), a detailed description of it seems justified. The specimen was a pregnant adult female, the uterus contained two embryos, the crownrump length of each being about 14 mms. It is a rather small Serotine with the fur soft, long and dense. The hairs attain about 10 mms. in length in the mid-dorsal region and somewhat less, about 8 mms. on the belly. They are everywhere bicoloured, rather less than half their length basally being slaty-grey. The colour of the whole undersurface is white, very faintly suffused with a buffy wash. There are indistinct lines of demarcation between the dorsal and ventral surfaces extending from the base of the ears to the antebrachial membranes. The upper surface is a uniform pale buffy clay colour, close to Honeysuckle, D. 6., Plate 12 of Maerz & Paul (1950). The pelage hardly extends on to the membranes at all, but the base of the tail above is lightly haired and scattered white hairs are present on the ventral surface of the wing membrane along the posterior border of the forearm. The ears and membranes are dusky and blackish, contrasting quite strongly with the pale pelage; the interfemoral membrane is semi-translucent. The